

COMMONWEALTH OF MASSACHUSETTS

Superior Court Department

Barnstable County

SUPERIOR COURT  
BARNSTABLE, SS

SEP 17 2018

*Sally W. Wilson* Clerk

BACR2013-80  
& 2014-189

Commonwealth

v.

Robert W. Shanahan

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Second Motion to Amend New-Trial Motion

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The defendant Robert W. Shanahan moves, under Mass. R. Crim. P. 30(c)(2), to amend the record appendix to his new-trial motion to add the affidavit of Ayanna K. Thomas, Ph. D., an eyewitness-identification expert. Dr. Thomas's affidavit supports Shanahan's argument that trial counsel's failure to investigate the research on eyewitness identifications denied him his right to the effective assistance of counsel.

Attached to this motion are an affidavit from appellate counsel as well as Dr. Thomas's affidavit and curriculum vitae.

September 14, 2018

Robert W. Shanahan

By his attorney,



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COMMONWEALTH OF MASSACHUSETTS

Superior Court Department

Barnstable County

BACR2013-80  
& 2014-189

Commonwealth,  
Plaintiff

v.

Robert W. Shanahan,  
Defendant

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Affidavit of Valerie A. DePalma

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I, Valerie A. DePalma, depose and state as follows:

1. I am an attorney admitted to practice law in the Commonwealth of Massachusetts.
2. I submit this affidavit in support of the defendant's motion, under Mass. R. Crim. P. 30(c)(2), to supplement the record appendix to his new-trial motion with the affidavit of Ayanna K. Thomas, Ph. D.
3. I make these statements on information and belief, based on my records and files.
4. On January 19, 2018, Shanahan filed his motion for new trial under Mass. R. Crim. P. 30(b).
5. On March 9, 2018, this Court allowed Shanahan's second motion for expert funds to retain Dr. Thomas to provide an opinion regarding the eyewitness-identification issues in this case.
6. Attached to this affidavit are Dr. Thomas's affidavit and curriculum vitae.
7. Dr. Thomas's affidavit supports Shanahan's argument that trial counsel's failure to investigate the eyewitness-identification research denied him the effective assistance of counsel.
8. More specifically, the affidavit supports his argument that expert testimony was necessary to explain the research on familiarity (Thomas Affidavit at 7-8, 32; New-Trial Motion at 33-38), unconscious transference (Thomas Affidavit at 8-12, 32; New-Trial Motion at 38-39), the distorting effects on memory of social contagion and after-acquired information (Thomas Affidavit at 12-13, 26-30,



32; New-Trial Motion at 39-41), and the unreliability of social-media identifications (Thomas Affidavit at 30-32; New-Trial Motion at 41-43).

9. Accordingly, this Court should allow Shanahan's motion to supplement the record appendix to his new-trial motion with Dr. Thomas's affidavit.

Signed under penalties of perjury on September 14, 2018.



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Valerie A. DePalma  
B.B.O. 639890



COMMONWEALTH OF MASSACHUSETTS

Barnstable County

Filed

SEP 17 2018

*Sally W. Hilder* Clerk

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Commonwealth

v.

Robert W. Shanahan

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AFFIDAVIT OF AYANNA K. THOMAS, PH.D.

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I, Ayanna K. Thomas, hereby state the following to the best of my knowledge, information, and belief:

1. Counsel for the defendant Robert Shanahan retained me to provide a synopsis of the relevant scientific research on eyewitness-identification. The eyewitness identification and report are central to this case; therefore, an understanding of the how memory works, and how it is affect by specific variables is important for evaluating the reliability of the eyewitnesses.
2. Counsel asked me to address the following issues: (1) the impact of an eyewitness's familiarity with a suspect on the accuracy of the witness's identification; (2) the phenomenon of unconscious transference; (3) the risk of memory distortion arising from an eyewitness's receipt of after-acquired information and confirmatory feedback; and (4) the reliability of social-media identifications.



3. This affidavit addresses those issues and well as others that I concluded were relevant to the eyewitnesses' identifications in this case.
4. To prepare this affidavit, I reviewed the following documents and materials: (a) the police reports and other documents attached to Shanahan's new-trial motion concerning the identification statements made by home-invasion victims Peter DeCamp and Colleen Cunningham; (b) DeCamp's medical records.
5. The salient facts are as follows. After returning home from dinner the evening of February 24, 2013, DeCamp answered a knock at the door. On the doorstep was a man wearing a knit watch cap. The man struck DeCamp two or three times on the head with a hammer.
6. During the ensuing brawl lasting four to five minutes, Cunningham appeared and pushed the men out the door onto the lawn, where the fight continued. At one point, a large kitchen knife fell out of the assailant's sweatshirt or jacket.
7. During the 911 call, Cunningham said that she did not know who the perpetrator was. DeCamp said it might have been "Rob" but he did not know. In the months preceding the attack, DeCamp had met Shanahan at most three times, and Cunningham had met him twice.



8. Later in the evening, after being jointly interviewed twice by the police, the victims searched for Shanahan's Facebook page, where they found three photographs of him. They later saw his mugshot in the newspaper. After these viewings, the victims were 100% confident that Shanahan had been their assailant.
9. Two years after the attack, the victims stated for the first time that they had seen Shanahan before the attack, on their way out to dinner. DeCamp also said for the first time that upon opening the front door, he had asked "Rob" what he was doing there.
10. In addition to the aforementioned materials, I consulted numerous academic publications by social scientists and legal researchers, a limited number of which are cited in the main text of this report. The scientific literature on which my conclusions here are based is summarized quite well by the Supreme Judicial Court Study Group on Eyewitness Evidence submitted on July 25, 2013; the research articles listed in that report's Table of Authorities constitute a representative sampling of the scientific research papers on which my present conclusions are based.



#### QUALIFICATIONS

1. As detailed in my curriculum vitae (attached), I am an Associate Professor in the Psychology Department at Tufts University in Medford, Massachusetts. I was an Assistant Professor in the Psychology Department at Colby College from 2005 to 2007, a Research Scientist in the Psychology Department at Washington University from 2004 to 2005, and a Forensic Researcher in Seattle, Washington from 1998 to 2001.
2. I earned a Ph.D. in Psychology from the University of Washington and held a Postdoctoral Fellowship at Washington University from 2001 to 2004. The focus of my research is memory creation, memory distortion, false memories, eyewitness memory, memory monitoring, and memory and aging.
3. I have published over forty papers and made numerous presentations at professional conferences on various topics concerning eyewitness memory and memory distortion.
4. I have testified/been consulted as an expert witness on research concerning eyewitness memory and eyewitness identification in 35 cases. My relevant expertise in the areas of memory accuracy, memory distortion, false memories, memory across the lifespan, memory consolidation and consolidation disruption, metacognitive processes, and eyewitness identification, is based on my record of



training, research, teaching, membership in professional organizations, and editorial responsibilities for leading journals in the field.

#### RELEVANT SCIENCE

#### Theoretical Understanding for How Memory Works.

##### I. Reconstructive Memory.

- Scientific research has demonstrated that eyewitness memory is often fallible, particularly under certain circumstances. Simply put, human memory does not function like a videotape, and even well-intentioned and confident eyewitnesses often make unintentional errors of identification. As opposed to recording an event, human memory is reconstructive in nature.
- Reconstructive memory refers to the idea that remembering the past requires an attempt to reconstruct the events experienced previously. Reconstructing memory will be in part based on experienced past events, but also on our general knowledge, our expectations, and our assumptions about what must have happened.
- In addition, reconstruction of the past is often influenced by experiences that occurred subsequent to the event in question. As such, recollections may be filled with errors when our assumptions and inferences, rather



then traces of the original events, determine them.

Errors, or false memories, constitute the prime evidence for reconstructive processes in remembering.

- I have published over a three-dozen peer-reviewed papers about false memories. The general finding in my and many other papers on this topic, is that false memories may occur when information perceived after an event interferes with memory for that event.
- Several different sources of error (inferences during encoding, information we receive about an event after its occurrence, our perspective during retrieval) exist.
- Therefore, contrary to popular belief, memory does not work like a video recorder, faithfully capturing the past to be played back unerringly at a later time. Rather, even when our memories are accurate, we have reconstructed events from the past.
- While this facet of memory has been empirically validated in several hundred studies beginning with Bartlett's seminal research in (1932), the average person is fairly secure in his own memory ability. Our personal experiences with memory bias us into believing that our memories can be trusted and truly memorable events may not be subject to distortion or bias.

## II. Episodic Memory



- Episodic memory is the specific neurocognitive system involved in the conscious recall of past experiences. Its hallmark is the association of a memory with a specific spatial and temporal context.
- Episodic memory can be thought to include two types of information: 1. memory for items previously encountered, and 2. memory for the context in which those items were encountered.
- Further, if we adopt a dual-process model of episodic memory recollection we assume that recollection of episodic events (including items and/or contexts) can be based on processes of familiarity and recollection.
- Conscious recollection of the context and other details associated with a prior experience can be an important influence in attributing some information to prior experience. However, often remembered events are attributed to prior experience, not because of a conscious recollective experience, but rather because those events accompany some feeling of familiarity (Jacoby, Kelley, & Dywan, 1989; Light, 2012; Reinitz, et al., 2012; Rhodes, Castel, & Jacoby, 2008; Wong, Cramer, & Gallo, 2012). Familiarity and recollection can be thought of as two independent mechanisms that influence remembering. Whereas recollection is a cognitively effortful conscious process,



familiarity has been described as a faster basis for responding than recollection. (Atkinson & Juola, 1974; Hintzman & Curran, 1994; Jacoby, Yonelinas, & Jennings, 1997; McElree, Dolan, & Jacoby, 1999; Yonelinas & Jacoby, 1996a, 1996b, 2012).

- Jacoby (1991) argued that conscious recollective processes at retrieval could be employed only in situations in which it was facilitated by prior processing. For example, in situations of divided attention at encoding, individuals may not have the capability of engaging in recollective processes at retrieval.

### **III. Episodic Retrieval and Unconscious Transference.**

- Episodic retrieval can involve either or both retrieval of an item from memory and retrieval of the context in which the item was presented. For example, a witness may indicate that a suspect was in fact the assailant because the witness has seen the suspect before; however, the witness may not have effectively integrated the suspect with the context in which the assailant was presented.
- Failures of integration can result in erroneous eyewitness accounts and incorrect identifications. These kinds of failures are obviously problematic, yet possible, if not likely.



- For example, during the aftermath of the Oklahoma City bombing, the FBI posted two composite pictures of possible suspects: (1) John Doe #1, a tall fair-haired man; and (2) John Doe #2, a short, dark-haired man with a tattoo beneath his left sleeve.
- The composites were based on descriptions provided by a mechanic at a truck-rental store in Junction City, Kansas. The mechanic said that two men matching those descriptions had rented the van used in the bombing. John Doe #1 was later identified as Timothy McVeigh, but John Doe #2 was not the man who rented the van alongside McVeigh.
- Instead, a man fitting the description of John Doe #2 came into the store the day after McVeigh rented the van, when the mechanic was also working.
- On that day, U.S. Army Sergeant Michael Hertig, who is tall and fair, rented a van with his friend Private Todd Bunting, who is short and has dark hair.
- The mechanic encoded information from each rental event. The memory error occurred because the mechanic failed to correctly integrate items within each episode (the renters) with the appropriate rental contexts (Schacter, 2001). Research has demonstrated that young adults are prone to



these kinds of integration, or source monitoring errors (Johnson, Hashtroudi, & Lindsay, 1993).

- According to the source-monitoring framework, source confusions or source misattributions, as illustrated in the John Doe #2 example, can have several etiologies. Confusions may occur because context and items are not sufficiently integrated at encoding as may happen in situations of divided attention (Dodson, Holland, & Shimamura, 1998; Gruppuso, Lindsay, & Kelley, 1997; Jacoby, Kelley, Brown, & Jasechko, 1989; Kelley & Sahakyan, 2003).
- Confusions can also occur when source information, or contextual details, is similar (Hashtroudi, Johnson, & Chrosniak, 1989; Lindsay, Johnson, & Kwon, 1991; Mitchell & Zaragoza, 2001; Thomas & Bulevich, 2006; Thomas, Bulevich, & Loftus, 2003).
- Unconscious transference is an error that occurs if the witness believes that the perpetrator and an innocent bystander are the same person. This could happen if the two people are seen sequentially, if they resemble one another sufficiently, and if face processing was insufficient to distinguish between them.
- Ross, Ceci, Dunning, and Toglia (1994a, 1994b) demonstrated a high rate of transference errors in witnesses who watched a video featuring first a male teacher, then a female



teacher, than a male thief stealing money from the female teacher's purse. A lineup containing the innocent male teacher and four foils was presented around 5 min after the film. The majority of the witnesses selected the innocent bystander, thus demonstrating unconscious transference.

- Furthermore, when asked whether the perpetrator had been seen anywhere other than the scene of the crime, most of the witnesses indicated that they had seen the perpetrator teaching earlier.
- Ross et al. (1994a, 1994b) argued that this effect is a form of memory blending, in which the two memories for perpetrator and innocent bystander are blended together at encoding, even though there may be clear contextual information for each occurrence. The identity-blending account is reminiscent of the work on change blindness.
- An alternative explanation for unconscious transference is that a witness may find one member of the lineup more familiar than the others but may not appreciate that the source of this familiarity is inappropriate for the identification decision.
- Jacoby's attributional account of memory allows predictions about what will happen when a stranger is encountered in a place one might frequent. This framework assumes that feelings of familiarity need to be interpreted, often as



evidence of "pastness" (Jacoby, Kelley, & Dywan, 1989). Usually this heuristic works, but it leads people astray when novel objects or experiences elicit feelings of familiarity for other reasons.

- For example, briefly glancing at a (nonstudied) word before deciding whether it is old or new increases the likelihood that one will incorrectly judge it as having been studied earlier in the experiment (Jacoby & Whitehouse, 1989). The literature is full of examples of people misinterpreting the fluency or ease of processing of words or symbols as evidence of familiarity (see Yonelinas, 2002, for a review).
- In four experiments, strangers were judged as being more familiar if they were paired with landmarks rather than novel scenes. Familiarity was defined as pre-experimental familiarity, and judgments were made without prior experimental exposure to the faces (Deffler, Brown, Marsh 2014).

Research in controlled settings supports the view that eyewitness memory is both fallible and malleable. For example, consider a now-seminal study in the malleability of memory conducted by Loftus and Palmer in which they demonstrated the capacity of simple changes in question



wording to alter eyewitnesses' memories of what they had seen. (See Loftus, & Palmer, 1974).

In this study research participants were shown a slideshow of a car accident and asked to estimate how quickly two cars were moving when they crashed. Eyewitnesses estimated a significantly faster speed for the cars when asked "about how fast were the cars going when they smashed into each other?" than they did when the same question was asked using a different verb such as collided, contacted, or bumped.

Moreover, one week after the presentation of the slideshow, participants who had been asked to estimate speed via a question using the word "smashed" were more likely to erroneously recall there having been broken glass at the scene of the accident, their memories permanently reconstructed to incorporate this detail of broken glass. This study is just one of many to demonstrate that memory does not function like a videotape, but rather is a reconstructive process in which witnesses take in bits of information from a variety of sources at different times and then generate memories that integrate all of the information.

The scientific literature has identified a wide range of factors that influence eyewitness memory including aspects



of the viewing situation itself (e.g., lighting, duration of exposure to the event, how clear a view the witness has), post-event information encountered by an eyewitness (e.g., from media accounts, conversations with attorneys or other witnesses, reactions of police to an identification), and factors under the control of investigators and the legal system (e.g., type of lineup administered, selection of lineup fillers, lineup instructions) (Brewer & Wells, 2011; Wells, et al., 1998; Wells & Olson, 2003).

This, and dozens of other empirical studies, led to important theoretical advances in our understanding of the mechanisms underlying memory, and specifically eyewitness memory. Examples include the source-monitoring framework (Johnson, Hashtroudi, & Lindsay, 1993), fuzzy-trace theory (Brainerd & Reyna, 2002), and an activation-based memory model (Ayers, & Reder, 1998).

#### **IV. Relationship Between Models of Memory and Eyewitness**

##### **Memory: Estimator and System Variables.**

- Although eyewitnesses can play a critical role in aiding investigations and their testimony at trial is usually very persuasive to jurors, an extensive body of scientific research has documented the fallibility of eyewitness memory (Brewer, & Wells, 2011).



- Using a variety of research methods including analysis of actual cases, staged crimes, and mock witness studies using photographs or filmed events, "eyewitness researchers have noted that mistaken identification rates can be surprisingly high and that eyewitnesses often express certainty when they mistakenly select someone from a lineup." (Wells, & Olson, 2003).
- To illustrate, in the more than 300 convictions that have been overturned over the past two decades based on new DNA evidence, analysis indicates that over 75% of the cases involved at least one eyewitness who had made an incorrect identification.
- These mistaken eyewitnesses often expressed certainty in their identification during testimony at trial. Some had spent long periods of time in the presence of the culprits they subsequently misidentified, and in many cases the mistaken eyewitness or eyewitnesses had made a good faith effort to provide accurate and useful information to investigators and at trial.
- In light of the scientific consensus regarding the limitations and malleability of eyewitness memory, the particular circumstances of an eyewitness identification or observation merit special scrutiny in cases in which the



identification is the linchpin of the evidence presented against a defendant.

- Researchers have identified a wide range of "estimator variables" that have been shown to contribute to eyewitness errors (i.e., factors that impede a witness's ability to attend to, see, and remember the events in question). These variables include: whether a witness had only a limited time to view the suspect; the witness's distance from the suspect; the lighting conditions under which a suspect is viewed; any temporary or more chronic cognitive deficits that might impair the witness's attention, perception, or memory or increase the witness's suggestibility; whether the event observed is a highly stressful event; and the possibility of unconscious transference, the process by which an eyewitness encounters an individual under innocuous circumstances but comes to mistakenly remember this individual as the perpetrator of a crime. All of these factors have been shown to have the potential to interfere with a witness's ability to accurately perceive and recall details of a particular event.
- Also relevant to assessments of the reliability of eyewitness' identification testimony are the particular circumstances of the administration of any identification procedure, sometimes referred to as "system variables."



Scientific research has identified a variety of procedures as critical to maximizing the accuracy and usefulness of an eyewitness identification made based on such presentations. These include: the blind administration of an eyewitness procedure, the precise instructions given to the witness; and the careful documentation of all aspects of the identification procedure.

In my opinion, multiple estimator-level and systems-level risk factors for suggestible or mistaken eyewitness identification are present in this case.

#### **V. Estimator Variables.**

##### **A. Stress**

- o There are factors present in this cases that have been shown to negatively impact eyewitnesses' independent memories. The following estimator variables should be considered when evaluating the accuracy of the eyewitnesses' accounts and identifications: stress, duration of event, presence of a weapon, disguise, inference generation, memory decay, and witness confidence.
- o High levels of stress or fear can have a negative effect on a witness's ability to make accurate identifications. Although moderate amounts of stress may improve focus in some circumstances, research



shows that high levels of stress significantly impair a witness's ability to recognize faces and encode details into memory. See Charles A. Morgan III et al., *Accuracy of Eyewitness Memory for Persons Encountered During Exposure to Highly Intense Stress*, 27 Int'l J. L. & Psychiatry 265, 275-76 (2004) (so stating).

- o The scientific literature reports that, an eyewitness under high stress is less likely to make a reliable identification of the perpetrator (Deffenbacher et al, 2006; Shields et al., 2017; Morgan et al., 2004). A meta-analysis of 27 independent studies conducted on the effects of stress on identification accuracy showed that, while 59 percent of the 1,727 participants correctly identified the target individual in a target-present lineup after a low-stress encounter, only 39 percent did so after high-stress encounters. Kenneth A. Deffenbacher et al., *A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory*, 28 Law & Hum. Behav. 687 (2004).
- o In another study, military survival school participants were subjected to two 40-minute interrogations, each by different interrogators, following a 12-hour period of confinement without food and sleep in a mock prisoner of war camp. Morgan,



*Accuracy of Eyewitness Memory*, 27 Int'l J. L. & Psychiatry 265 (2004). One interrogation was conducted under high-stress conditions, involving physical confrontation, while the other was conducted under low-stress conditions, involving only deceptive questioning. *Id.*

- o When asked the next day to identify their interrogators, only 30 percent of the participants correctly identified their high-stress interrogator, while 60 percent correctly identified their low-stress interrogator. *Id.* The study also noted an associated increase in false identifications—56 percent of the participants falsely identified another person as their high-stress interrogator, compared to 38 percent who did so with regard to their low-stress interrogator. *Id.*
- o The negative effect of stress on the reliability of eyewitness identifications contradicts a common misconception that faces seen in highly stressful situations can be "burned into" a witness's memory. Consequently, the amount of stress inflicted on an eyewitness has the potential to impair a jury's ability to fairly and accurately weigh reliability,



because jurors may incorrectly assume that stress increases reliability.

- o In addition, stress may also interact with other factors to compound unreliability. Studies demonstrate, for example, that witnesses are more likely to overestimate short durations of time in high-stress situations than in low-stress situations. See Elizabeth F. Loftus et al., *Time Went by so Slowly: Overestimation of Event Duration by Males and Females*, 1 *Applied Cognitive Psychol.* 3 (1987) (so stating).

- o The materials I reviewed indicate that the attack was a highly stressful event. DeCamp and the assailant then engaged in a brawl, witnessed by Cunningham, during which a large kitchen knife fell out of the assailant's sweatshirt or jacket. The stress of the attack could have had an impact on the victims' ability to accurately identify the perpetrator.

#### B. Attention and Weapon Focus.

- o In assessing eyewitness reliability, it is important to consider not only what was within the witness's view, but also on what the witness was actually focusing his or her attention. Attention clearly plays



a role in eyewitness memory. Both change blindness and divided attention disrupt eyewitness memory.

- o Change blindness is an attention failure related to inattentional blindness. It occurs when people fail to notice that some aspect of a scene or event has changed.
- o In studies concerning change blindness and eyewitness memory, the culprit is the feature that changes. The person who committed a crime disappears behind an object and is replaced by another individual. Witnesses often experience change blindness, failing to notice that the criminal has been replaced. Importantly, change blindness increases erroneous identifications (Fitzgerald, Oriet, & Price, 2016; Nelson, Laney, Fowler, Knowles, Davis, & Loftus, 2011).
- o Divided attention during encoding also disrupts eyewitness memory. For example, Lane (2006) asked participants to divide their attention between viewing a slideshow of a crime and a secondary task. People remembered fewer details from the slides and were more likely to adopt misinformation when attention was divided than when they only watched the slides (see also Greene, Murphy, & Januszewski, 2017; Murphy &



Greene, 2016; Sauer & Hope, 2016; Zaragoza & Lane, 1998).

- o Similarly, listening to a background cell phone conversation disrupted accurate descriptions and identification of a perpetrator (Marsh et al., 2017).
- o Research on attention and eyewitness memory is, however, limited. How inattentional blindness impacts eyewitness awareness, memory, and particularly identifications is unclear. Since many potential witnesses are not watching for a crime, this is important area for additional research.
- o Inattentional blindness disrupts awareness for unattended events. Can inattentional blindness also disrupt memory for the focus of attention? Lewinski and his colleagues (Lewinski, 2008; Lewinski, Dysterheft, Priem, & Pettitt, 2016; Lewinski & Redmann, 2009) have argued that people may experience inattentional blindness for the objects and events on which they are selectively focused. They have argued that police officers may fail to notice some features of the event at the center of their attentional focus. Police officers may not notice that a suspect is no longer a threat (Lewinski & Redmann, 2009).



- o Hyman (2016) noted that there is no research consistent with this claim. Nonetheless, it is useful to investigate memory for the events on which people are focused to ascertain if inattention blindness reduces memory for that information in comparison to people not focused on those events.
- o According to the attentional-narrowing hypothesis (Christianson, 1992), memory for emotional events is mediated by differential attention allocation. That is, an increase in emotional arousal would result in an attentional focus on information reflecting the gist of the event (central detail information), at the expense of attention for irrelevant information (peripheral detail information). Consequently, memory for central information would be enhanced, whereas memory for peripheral information would be impaired.
- o The attentional-narrowing hypothesis is supported by two lines of research. According to Easterbrook's influential notion, stress progressively reduces the range of cues utilized in a task. Tasks of selective attention benefit from stress because of the growing exclusion of irrelevant cues. Wells and Matthews (1994) concluded that "one of the few consistent effects of arousing stressors which generalizes across



different sources of stress is narrowing of attention" (p. 187).

- o Easterbrook's (1959) notion has been extended by subsequent investigators to apply to a variety of procedures and stressors (Broadbent, 1971; Eysenck, 1982; Hockey, 1970a, 1970b, 1978; Hockey & Hamilton, 1983; A. P. Smith, 1991; Wachtel, 1967; Warburton, 1988). Baron (1986) extended the notion to socially induced stress (see also S. Cohen, 1978; Huguet et al., 1999; MacKinnon, Geiselman, & Woodward, 1985; Sanders, Baron, & Moore, 1978). One commonly encountered example of that fact is the weapon-focus effect. Studies consistently show that the visible presence of a weapon during an encounter negatively affects memory for faces and identification accuracy because witnesses tend to focus their attention on the weapon instead of on the face or appearance of the perpetrator, or on other details of the encounter. See, e.g., Kerri L. Pickel, Remembering and Identifying Menacing Perpetrators: Exposure to Violence and the Weapon Focus Effect, in 2 The Handbook of 62 Eyewitness Psychology: Memory for People 339 (R.C.L. Lindsay et al. eds., 2007). That diminished attention factor frequently impairs the



witness's ability to encode things such as facial details into memory, resulting in decreased accuracy in later identifications.

#### C. Duration of Event.

- o Scientific studies indicate that longer durations of exposure (time spent looking at the perpetrator) generally result in more accurate identifications. Brian H. Bornstein et al., *Effects of Exposure Time and Cognitive Operations on Facial Identification Accuracy: A Meta-Analysis of Two Variables Associated with Initial Memory Strength*, 10 Psychology, Crime & Law 473 (2012).
- o Studies have reported that, while there is no minimum time required to make an accurate identification, a brief or fleeting contact is less likely to produce an accurate identification than a more prolonged exposure.
- o A meta-analysis by Shapiro and Penrod (1986) showed that the linear trend for exposure time was associated with improved performance.
- o The effects of exposure time were illustrated in a study by Memon, Hope, and Bull (2003) in which mock witnesses viewed a realistic videotaped crime in which



the target/perpetrator was visible for 12 versus 45 seconds. Witnesses were tested with target-present and target-absent arrays 40 minutes later. The proportion of correct identifications in target-present arrays and correct rejections in target-absent arrays increased substantially when exposure time increased from 12 seconds to 45 seconds (from 32% to 90% for correct identifications and from 15% to 59% for correct rejections), although mistaken identifications in target-absent arrays remained high even with longer exposure (85% at 12 seconds and 41% at 45 seconds).

- o The negative effect of weapon-focus on identification accuracy may be magnified when combined with stress, short exposure times, poor viewing conditions, or longer retention intervals, and may also result in less accurate initial descriptions of the perpetrator. *Id.*; Nancy Mehrkens Steblay, *A Meta-Analytic Review of the Weapon Focus Effect*, 16 *Law & Hum. Behav.* 413, 417 (1992).

## VI. System Variables.

### a. Social Contagion and Co-Witness Contamination

- o In laboratory settings, social interactions have been shown to influence memory errors. In these studies, participants are paired with a confederate - an



individual posing as a participant, but actually is a part of the experiment.

- o These participant-confederate pairs study some new information. For example, they could study pictures of common household scenes (e.g., kitchen) together. Following this study phase, the participant and confederate take turns recalling items from each of the scenes. Importantly, during this collaborative recall test the confederate accurately reports items that were studied, but also erroneously reports items that were not present in the scenes.
- o Invariably, participants endorse some of these erroneous details and falsely recall them on subsequent memory tests. This social contagion of memory effect has been replicated a number of times, demonstrating the robustness of this type of memory distortion (Davis & Meade, 2013; Meade & Roediger, 2002; Numbers, Meade, & Perga, 2014; Roediger, Meade, & Bergman, 2001).
- o In organic social interactions outside of the laboratory, eyewitnesses are not given explicit warnings about a co-witness's unreliability. When an eyewitness does not know a co-witness, the eyewitness may rely upon indirect social cues to form heuristic



judgments about the co-witness's credibility and competence.

- o For example, research has shown that people tend to perceive individuals from their in-group as more credible and trustworthy than individuals from an out-group (e. g., Doosje, Branscombe, Spears, & Manstead, 2006).
- o Andrews and Rapp (2014) examined how in-group membership can impact social memory. Participants were paired with either in-group or out-group confederates who introduced inaccurate information about a co-witnessed event. In-groups were established by pairing participants with confederates who they believed had similar artistic preferences and perceptual processing styles.
- o Andrews and Rapp (2014) found that the social contagion effect was reduced when the confederates were members of participants' out-groups. Relatedly, co-witness pairs who know one another may be perceived as more trustworthy and credible, which can exaggerate the social contagion effect.
- o French, Garry, and Mori (2008) found that romantic partners who unknowingly exposed one another to false information about a witnessed event during a



collaborative memory test reported more false details on a later independent memory test compared to co-witness pairs who were strangers.

#### **B. Inference Generation**

- o Both 'schema' and 'script' concepts have been shown to influence memory and eyewitness identification (e.g., Bartlett, 1932; Farrar & Boyer-Pennington, 1999; Schank & Abelson, 1977).
- o A schema may be defined as a "generic knowledge structure ... that provides a knowledge base that guides the comprehender's interpretation of explicitly stated information, generation of inferences, and expectations" about what happens in a variety of situations (Graesser, Woll, Kowalski, & Smith, 1980, p. 504).
- o A script may be defined as a specialized type of schema that corresponds to routine, everyday events, such as eating at a restaurant or going to the doctor. When scripts are activated they can facilitate the organization and comprehension of event-based situations (Abelson, 1981).
- o For instance, people often utilize their scripted knowledge as an interpretative guide, enabling them to predict what should happen in a given situation, such



as a going out for dinner. However, this expectancy-guided knowledge can bias people to report that something that usually happens actually occurred, even when it did not (Sulin & Dooling, 1974; Ceci & Bruck, 1993).

- o For example, when people have a well-established script resulting from repeated experience with an event, they may confuse memory of a specific event with memory of related episodes, especially when the events are very similar (e.g., Thomas & Loftus, 2002).
- o Incorrect inferences have been shown to occur when people have read or listened to a script-based story, such as "what happens when you go to a restaurant." They may later experience difficulty distinguishing 'typical' script information referred to in the story from 'typical' script information that was not referred to in the original story, and often wrongly indicate that typical script information was included in the story when it was not (e.g., Adams & Worden, 1986; Davidson & Hae, 1993; Hudson, 1988; Hudson & Nelson, 1983).

### C. Confirmation Bias



- o Confirmation bias has been used in the psychological literature to connote the inappropriate bolstering of hypotheses or beliefs whose truth is in question. It refers usually to unwitting selectivity in the acquisition and use of evidence. The line between deliberate selectivity in the use of evidence and unwitting molding of facts to fit hypotheses or beliefs is a difficult one to draw in practice, but the distinction is meaningful conceptually, and confirmation bias has more to do with the latter than with the former.
- o As it relates to the present case, the witness sought confirming evidence using the online social networking site Facebook. The assumption that people can and do engage in case-building unwittingly, without intending to treat evidence in a biased way or even being aware of doing so, is fundamental to the concept.
- o People tend to seek information that they consider supportive of favored hypotheses or existing beliefs and to interpret information in ways that are partial to those hypotheses or beliefs. Conversely, they tend not to seek and perhaps even to avoid information that would be considered counterindicative with respect to those hypotheses or beliefs and supportive of



alternative possibilities (Koriat, Lichtenstein, & Fischhoff, 1980).

#### CONCLUSION

- In this case, there are numerous factors that could have hindered the victims' ability to observe and later recall the perpetrator's physical appearance. The situation was undoubtedly stressful, two weapons were present, the assailant was wearing a hat tantamount to a disguise, and the incident appears to have happened quickly.
- The victims' level of familiarity with Shanahan may have resulted in a misattribution error, or unconscious transference.
- The victims' joint viewing of Shanahan's photos on Facebook and mugshot in the newspaper as well as their discussions, both private and with the police, regarding the details of the attack could also have negatively impacted their memories and ability to make an accurate identification.
- The victims' disclosure two years after the attack that they had seen Shanahan on their way out to dinner may have been the result of unconscious transference or source misattribution errors, and more general memory reconstructive processes.



- Multiple instances of seeking evidence that confirmed the victim's hypothesis (i.e., Facebook search) may have resulted in inaccurate information becoming incorporated into the victim's memory for the original event.

Signed under penalties of perjury on September 13, 2018.

**Ayanna K. Thomas**

Digitally signed by Ayanna K.

Thomas

Date: 2018.09.13 15:18:51 -04'00'

Ayanna Kim Thomas  
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Department of Psychology  
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## **Curriculum Vitae**

**Ayanna Kim Thomas**

### **PERSONAL INFORMATION**

**Address:** The Psychology Department  
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### **EDUCATION & TRAINING**

Postdoctoral Fellowship, 2001-2004

Ph.D. in Psychology, 2001

B.A. in Psychology and African American Studies 1996

Washington University

University of Washington

Wesleyan University

### **PROFESSIONAL EXPERIENCE**

Associate Professor, Psychology Dept., Tufts University, 2013 – present.

Assistant Professor, Psychology Dept., Tufts University, 2007 – 2013.

Assistant Professor, Psychology Dept., Colby College, 2005 – 2007.

Research Scientist, Psychology Dept., Washington University, 2004 – 2005.

Forensic Researcher, Seattle WA, 1998 – 2001.

### **PROFESSIONAL AFFILIATIONS**

American Psychological Society

Psychonomic Society

The Society for Applied Research in Memory and Cognition

### **FELLOWSHIPS / AWARDS**

- Neubauer Faculty Fellow, 2008
- National Institutes of Health Clinical Research Loan Repayment Program, Colby College, 2005
- National Institutes of Health/Brookdale Summer Institute on Aging Graduate Research, NIA, 2002
- National Institutes of Health Clinical Research Loan Repayment Program, Washington University, 2002
- APA Research Fellowship, (Administered through NIH) University of Washington, 2000
- Dissertation Fellowship, University of Washington, 2000
- Travel Award, University of Washington, 2000, 1998
- APA Minority Research Fellowship, American Psychological Association, 1999
- Recruitment Award, University of Washington, 1996



- Wakley Prize, for outstanding undergraduate research, Wesleyan University, 1996
- McNair Fellowship, Wesleyan University, 1996

#### **GRANTS**

Tufts Collaborates! (Tufts University). 2016-2017.

Principal Investigator: Ayanna K. Thomas

Title: Stress and Memory in the Elderly.

\$49,913.96.

Center for Applied Brain and Cognitive Science 2016 – 2017.

Principal Investigator: Ayanna K. Thomas

Title: The Positive and Negative Consequences of Acute Stress on Memory

\$93,108.00.

Tufts Innovates! (Tufts University) 2015-2016.

Principal Investigator: Mary Davis, Urban and Environmental Policy, Tufts University

Title: Imagination Economics: Innovations in Creative Learning

Faculty Research Award (Tufts University) February 2015

Principal Investigator: Ayanna K. Thomas

Title: Breaking the Barrier of Test-Day Anxiety

Faculty Research Award GIA (Tufts University) February 2012

Principal Investigator: Ayanna K. Thomas

Title: Testing Potentiates New Learning

Faculty Research Award (Tufts University) Summer 2011

Principal Investigator: Ayanna K. Thomas

Title: Often Wrong, But Never In Doubt: The Tension in Between Memory and Metamemory in the Eyewitness

Faculty Research Award (Tufts University) October 2009

Principal Investigator: Ayanna K. Thomas

Title: Remembering "where" is easier than remembering "what": A comparison of spatial working memory in older and younger adults

Faculty Research Award (Tufts University) October 2007

Principal Investigator: Ayanna K. Thomas

Title: How Cognitive Functioning Mediates the Use of Distinctive Processing

Goldfarb Center Faculty Research Grant (Colby College) August 2006 – July 2007

Principal Investigator: Ayanna K. Thomas

Title: The Negative Cascade of Incongruent Task-Test Processing Can be Avoided: The Utility of Testing

Division of Social Sciences Award (Colby College) September 2006 – August 2007

Principal Investigator: Ayanna K. Thomas



**Title: Metamemorial Stage Analysis in People in Older Adults**

**National Institute of Aging (RO3) September 2004 - August 2006**

**Principal Investigator: Ayanna K. Thomas**

**Title: Metamemory Deficits in People with Alzheimer's disease**

**Total Direct Costs: \$2,000**

## **PUBLICATIONS**

### **EYEWITNESS MEMORY AND MEMORY DISTORTION**

1. Gordon, L. M. & Thomas A.K. (2016). Testing Leads to Better Potentiation of Misinformation than Highlighting.
2. Gordon, L. M. & Thomas A.K. (2016). Retrieval is a Double Edged Sword: Enhanced Suggestibility and Potentiated Learning.
3. Auslander, M. V., Thomas, A.K., & Gutchess, A.H. (2017). How confidence moderates the control-belief memory performance relationship in the misinformation effect, *Experimental Aging Research*, 43.
4. Thomas, A. K., Chen, C., Gordon, L. T., & Tenebrink T. (2015). Choose your words wisely: What verbal hesitation indicates about eyewitness memory. *Applied Cognitive Psychology*, 29, 735-741.
5. Gordon, L., Bulevich, J. B. & Thomas, A. K. (2015). Looking for answers in all the wrong places: How testing facilitates learning of misinformation. *Journal of Memory and Language*, 83 – 140-151.
6. Thomas, A. K., Gordon, L. & Bulevich, J. B. (2014). Applications of Cognitive Decline to Eyewitness Memory. In the *Elderly Witness* (Toglia, M. P., Ross, D. F., Pozzulo, J., & Pica, E. ed), Springer Publishing Company.
7. Gordon, L. T. & Thomas, A. K. (2014). Testing potentiates learning in the misinformation paradigm. *Memory and Cognition*, 42, 186-197.
8. Thomas, A. K., & McDaniel, M. A. (2013). Frontal functioning impacts the effectiveness of encoding processes in reducing false memories. *Aging, Neuropsychology, and Cognition*, 20, 443-470.
9. Bulevich, J.B., & Thomas, A. K. (2012). Retrieval effort improves memory and metamemory in the face of misinformation. *Journal of Memory & Language*, 67, 45-58.
10. Thomas, A.K., Bulevich, J. B. & Chan, J.C.K. (2010) Reducing retrieval enhanced suggestibility through warning. *Journal of Memory & Language*, 63, 149 – 157.
11. Chan, J. C. K., Thomas, A. K., & Bulevich, J. B. (2009). Recalling a witnessed event increases eyewitness suggestibility. *Psychological Science*, 20, 66-73.
12. Thomas, A. K., Hannula, D. E., and Loftus, E. F. (2007). How Self-Relevant Imagination Affects Memory for Behaviour? *Applied Cognitive Psychology*, 21, 69-86.
13. Thomas, A. K. & Bulevich, J. B. (2006). Effective Cue Utilization Reduces Memory Errors in Older Adults. *Psychology & Aging*, 21, 379-389.



14. Thomas, A. K. & Loftus, E.F. (2006) Eyewitness memory: Getting more accurate information. *Gazette*, 67, #4, p 30-31. (Magazine of the Royal Canadian Mounted Police)
15. Thomas, A. K. & Sommers, M. S. (2005). Attention to Item-Specific Processing Eliminates Age Effects in False Memories. *Journal of Memory & Language*, 52, 71-86.
16. Thomas, A. K., Bulevich, J. B., & Loftus, E. F. (2003). Exploring the role of repetition and sensory elaboration in the Imagination Inflation effect. *Memory & Cognition*, 31, 630-640.
17. Berliner, L., Hyman, I., Thomas, A. K., & Fitzgerald, M. (2003). Children's memories for traumatic and positive experiences: Relationship to psychological symptoms. *Journal of Traumatic Stress*, 16, 229-236.
18. Thomas, A. K., & Loftus, E. F. (2002). Creating bizarre false memories through imagination. *Memory & Cognition*, 30, 423-431.
19. Hoffman, H. G., Garcia-Palacios, A., Thomas, A. K. & Schmidt, A. (2001). Virtual reality monitoring: Phenomenal characteristics of real, virtual, and false memories. *CyberPsychology and Behavior*, 4, 565-572.

### **COGNITIVE AGING AND METACOGNITION**

1. Perry, C., Thomas, A. K., Taylor, H. A., Jacques, P. F., & Kanarek, R. B. (2016). The impact of caffeine use across the lifespan on cognitive performance in the elderly. *Appetite*.
2. Smith, A. M., Gallo D.A., Barber, S. J., Maddox K., & Thomas, A. K. (2016). Using the DRM Paradigm to Better Understand the Role of Individual Differences in Older Adults' Susceptibility to Stereotype Threat.
3. Lee, M. & Thomas, A. K. (2016). Understanding Metacognitive Control in Older Adults.
4. Bulevich, J.B., Parsow, C., & Thomas, A.K. (2015) Integration is critical for test potentiation effects. *Memory*.
5. Thomas, A. K. & Lee, M. (2015). Improving Metacomprehension by Fostering Active Engagement. In *Memory* (Moulin, C. & Souchay, C. ed), Wiley-Blackwell, London.
6. Thomas, A.K., Lee, M., & Hughes, G. (2015). Feeling-of-Knowing judgments (FOKs). In *the Oxford Handbook of Metamemory* (Dunlosky, J. & Tauber, S. ed), Oxford University Press, New York.
7. Taylor, H.A., Thomas, A. K., Artuso, C., Eastman, C. (2014). Effects of global and local processing visuo-spatial working memory. C. Freksa et al. (Eds.): *Spatial Cognition 2014*, LNAI 8684, pp. 14-29.
8. Thomas, A. K., Balota, D. A., & Lee, M. (2013). Intrinsic and extrinsic influences on JOLs in older adults with Alzheimer's disease. *Neuropsychology*, 27, 452-463.
9. Gordon, L. T., Soldan, A., Thomas, A. K., & Stern, Y. (2013). Effect of repetition lag on priming of unfamiliar visual objects in young and older adults. *Psychology and Aging*, 28, 219-231.
10. Thomas, A.K., Bulevich, J. B., & Dubois, S. J., & (2012). An analysis of the determinants of the feeling-of-knowing. *Consciousness and Cognition*, 21, 1681 - 1694



11. Thomas, A.K., Bonura, B. M., Taylor, H.A., & Brunye, T.T. (2012). Metacognitive monitoring in visuo-spatial working memory. *Psychology and Aging*, 27, 1099-1110.
12. Thomas, A. K., Bonura, B. M., & Taylor H.A. (2012). The influence of semantic relationships on older adult map memory. *Psychology and Aging*, 27, 657-665.
13. Thomas, A. K. & Millar, P. R. (2012). Reducing the framing effect bias in older adults by encouraging analytical processing. *Journal of Gerontology: Series B: Psychological Sciences and Social Sciences*, 67B, 139-149.
14. Thomas, A. K. & Dubois, S. (2011). Reducing the burden of stereotype threat eliminates age differences in memory distortion. *Psychological Science*, 22, 1515-1517.
15. Thomas, A. K., Bulevich, J.B., & Dubois, S. (2011) Context affects feeling-of-knowing accuracy in younger and older adults. *Journal of Experimental Psychology: Learning, Memory & Cognition*, 37, 96 – 108.
16. Thomas, A. K., Dave, J. B., & Bonura, B. M. (2010). Neuropsychological components of cognitive aging. In the *Handbook of Medical Neuropsychology: Applications of Cognitive Neuroscience* (Armstrong, C. L. ed), Springer Publishing Company.
17. Thomas, A. K. & McDaniel, M. A. (2007). The negative cascade of incongruent task-test processing in memory and metamemory. *Memory & Cognition*, 35, 668-678.
18. Thomas, A. K. & McDaniel, M. A. (2007). Metacomprehension for Educationally Relevant Materials: Dramatic Effects of Encoding-Retrieval Interactions. *Psychonomic Bulletin & Review*, 14, 212-218.

#### INVITED PRESENTATIONS AND SYMPOSIA

- U.S. Army Natick Soldier Research Development and Engineering Center (2016). Why We Should Consider Memory and Cognition When Learning.
- Massachusetts Institute of Technology, Knight Science Journalism (2015). Repeatedly Questioning the Eyewitness.
- MCLE New England, (2015) Trends in Eyewitness Identification.
- OT-CH Research Breakfast, Occupational Therapy, Tufts University. Strategic Regulation of Older Adult Memory.
- Jumbo-days Mock Class, Tufts University (2015). Memory and Cognition.
- VA Boston Neuroimaging and Neuropsychology Lecture Series (2015). Strategic Regulation in Older Adults.
- Schacter-Buckner Lab Meeting, Harvard University (2015). Two Sides of the Same Coin: Misinformation Production and Post-event Learning after Retrieval Practice.
- Brookhaven at Lexington (2015). Cognitive Aging.
- Back 2 the Future 2, Tufts University Trustees event (2015). Breaking the Barrier of Test Day Anxiety. Boston MA
- Back 2 the Future 2, Tufts University Trustees event (2015). This is Your Brain...Aging. Washington DC.



- Osher Lifelong Learning Institute, Lunch and Learn Series (2014). *Regulating Our Memory as We Age*.
- Arlington Senior Center (2014). *Cognition and Aging*.
- Video Series with Tufts Experts, Tufts University (2014). *Why do we forget?*
- Jumbo-days Mock Class, Tufts University (2014). *The Consequences of Memory Distortion*.
- Tufts University, Advancement Division Meeting (2014). *Cognitive Aging*.
- Association of Tufts Alumae, Panel Discussion (2014). *Women's Health, Nutrition, and Wellness*.
- Back 2 the Future 2, Tufts University Trustees event (2013). *This is Your Brain...Aging*. New York City.
- Tufts University, Alumni Leadership Summit (2013). *Cognitive Resources and Cognitive Aging*.
- SARMAC X (2013). *Testing Potentiates New Learning in the Misinformation Paradigm*.
- Tufts University, A Taste of Tufts (2013) *The Unreliable Nature of Episodic Memory*.
- Brandeis University, Psychology Department Colloquium Series, (2013) *Strategic Regulation of Memory*
- Richard Stockton College of New Jersey, Psychology Department Colloquium Series, (2013) *Supporting Older Adult's Memory*.
- Human Nutrition Research Center on Aging Seminar Series, Collaborations on Healthy Aging at Tufts (2012). *Reducing Memory Interference in Older Adults*.
- Tufts University, Parents and Family Weekend (2012). *The Fallibility of Memory*.
- Central Square Theater, Cambridge MA (2012). *Talk-in-the-Box Event for Yesterday Happened: Remembering H.M.*
- Middlebury College, Psychology Colloquium Series, Middlebury VT (2012). *Repeated Retrieval Reduces Interference*.
- Southern Society for Philosophy and Psychology, Savannah GA (2012). *Meaning Matters in the Feeling-of-Knowing*.
- Cummings School of Veterinary Medicine, Tufts University (2011). *Testing and Memory Suggestibility*.
- VA Boston Neuropsychology/Neuroimaging Lecture Series (2011). *The Biasing Effects of Semantic Associations*.
- University of Washington, Cognitive Colloquium Series, Seattle WA (2011). *The Positive and Negative Consequences of Retrieval*.
- Arlington Senior Center, Arlington, MA (2009). *Memory and the Aging Mind*.
- California State University, Fullerton, MA (2009). *Retrieval Enhances Suggestibility*.
- Dartmouth College, NH (2008). *Suggestibility and Confidence*.



- Colby College, Parents Weekend, Waterville ME (2006). Memory Changes Across the Lifespan.
- Meeting of the Psychonomic Society, Toronto, CA (2005). Applying Cognition to Education.
- Meeting of the Psychonomic Society, Toronto, CA (2005). Transfer Appropriate Processing Improves Metacomprehension.
- Geriatric Research Education Clinical Center, Edith Nourse Rogers Memorial Veterans Hospital, Bedford MA (2004). Feeling of Knowing in Younger and Older Adults.
- The Minority Aging Network in Psychology, Los Angeles, CA (2002). Imagination Inflation.
- Southeastern Psychological Association, New Orleans, LA (March, 2000). I Kissed a Frog: Imagination's Effects on Memory for Usual and Unusual Simple Actions.

#### CONFERENCE PRESENTATIONS

- Thomas, A.K. (2016). Frequent Testing in the Classroom Promotes Mastery of New Concepts. International Conference on Memory – 6, Budapest, Hungary.
- Thomas, A.K. (2016). Symposium Co-chair. Is Performance Best With or Without Stress? Examining the Relationship between Stress and Cognition. 28th annual meeting of the Association for Psychological Science, Chicago, IL.
- Smith, A. M., Thomas, A. K. (2016). Retrieval Practice Helps Memory Persist Through Stress. Talk to be given at the 28th annual meeting of the Association for Psychological Science, Chicago, IL.
- DeCaro R., Thomas A. K., Urry H. L., Taylor H. (2016). Effect of Social Network on Older Adult's Cognitive Function after Relocation. Poster to be presented at the Proceedings of the 2015 Cognitive Aging Conference, Atlanta, Georgia.
- Gordon, L. T. & Thomas, A. K. (November, 2015). Two Sides of the Same Coin: Retrieval Enhanced Suggestibility or Retrieval Enhanced Learning. Invited talk Proceedings of the 56th Annual Meeting of the Psychonomic Society. Chicago, IL.
- Smith, A.M., Thomas, A. K., & Mazerolle, M. (2015). Increasing Age-Related Memory Distortion via Stereotype Activation. Poster presented at the 56th annual meeting of The Psychonomic Society, Chicago, IL.
- Dai, R., Thomas, A. K., & Taylor, H. A. (2016). Spatial organization differentially impacts younger and older adults' VSWM. Poster to be presented at the Proceedings of the 2016 Cognitive Aging Conference. Atlanta, GA.
- Dai, R., Thomas, A. K., & Taylor, H. A. (2015). Emphasizing Attributes Affects Strategic Processing in VSWM. Poster presented at the Proceedings of the 56th Annual Meeting of the Psychonomic Society. Chicago, IL.



- Reid, A. G., Rakhilin, M., Patel, A. D., Urry, H. L., Thomas, A. K. (2015). Singing training as an intervention for age-related cognitive decline: Preliminary results. Poster presented at the meeting of the Society for Music Perception and Cognition, Vanderbilt, TN.
- Smith, A. M., Thomas, A. K., Barber, S. J., & Gallo, D. A. (2015). Age-related stereotypes may not be about age at all. Talk given at the annual meeting of the American Psychological Society, New York, NY.
- Smith, A. M. & Thomas, A. K. (2015). Ageist stereotyping and false memory: An individual differences approach. Talk given at the Proceedings of the 86th Eastern Psychological Association, Philadelphia, PA.
- Dai, R., Thomas, A.K., & Taylor, H.A. (2015). The "where" and the "what": Aging and visuo-spatial working memory. Poster presented at the Proceedings of the 86th Eastern Psychology Association Meeting, Philadelphia, PA.
- Lee, M., & Thomas, A. K. (2015). Reducing age-related differences in self-regulated learning with cognitive resource support. Spoken Session at the 86th Annual Meeting of Eastern Psychological Association, Philadelphia, PA
- Smith, A. M., Wong, J. T., Barber, S. J., Gallo, D. A., & Thomas, A. K. (2015). Negative Aging Stereotypes Influence Memory Distortion in the Elderly. Poster presented at the Healthy and Active Aging at Tufts annual kickoff event, Medford, MA.
- Oppenheim, S., Dai, R., Thomas, A.K., & Taylor, H.A. (2015). Effects of aging and visuo-spatial processing on map memory. Proceedings of the Kickoff Meeting of the Healthy and Active Aging at Tufts (HA2T). Tufts University, Medford, MA.
- Lee, M., Thomas, A. K., Bulevich, J. (2015). Improving Metacognitive Control by Reducing Task Demands. Poster session at Healthy and Active Aging at Tufts University, Medford, MA.
- Dai, R., Thomas, A.K., & Taylor, H.A. (2015). Binding "what" and "where": Changing strategies across the lifespan. Proceedings of the Kickoff Meeting of the Healthy and Active Aging at Tufts (HA2T). Tufts University, Medford, MA.
- Lee, M., Thomas, A. K., Bulevich, J. (2014). Improving Metacognitive Control by Reducing Task Demands. Poster session at the 55th annual meeting of the Psychonomic Society, Long Beach, CA.
- Gordon, L. T., Thomas, A. K., & Bulevich, J. B. (2014). Attending to New Information after Testing Results in Witness Memory Errors. Talk given at the 55th Annual Meeting of the Psychonomic Society.
- Smith, A. M., Wong, J. T., Barber, S. J., Gallo, D. A., & Thomas, A. K. (2014). Negative Aging Stereotypes Influence Memory Distortion in the Elderly. Poster presented at the annual meeting of The Psychonomic Society, Long Beach, CA.
- Dai, R., Thomas, A.K., & Taylor, H.A. (2014). Binding "what" and "where": Changing strategies across the lifespan. Proceedings of the 55th Annual Meeting of the Psychonomic Society. Long Beach, CA.



- Gordon, L. T., Bulevich, J. B., & Thomas, A. K. (2014). Retrieval Enhances Memory and Learning in the Misinformation Paradigm. 26th Annual Convention of the Association for Psychological Science, San Francisco, CA.
- Lee, M. & Thomas, A. K. (2014). Reducing Age-Related Deficits in Metamemorial Control. Poster session presented at the 26th Annual Meeting of Association for Psychological Science, San Francisco, CA.
- Gordon, L. T., Bulevich, J. B., & Thomas, A. K. (2014). Shifts in attention allocation after testing in the misinformation paradigm. 85th Annual Meeting of the Eastern Psychological Association, Boston, MA.
- Lee, M. & Thomas, A. K. (2014). Age-related differences in self-regulated learning: Does the encoding support improve metamemorial control? 85th Annual Meeting of Eastern Psychological Association, Boston, MA.
- Cernasov, P., Gordon, L. T., Thomas, A. K., & Bulevich, J. B. (2014). Endogenous and Exogenous Attention Direction in a Repeated Testing Misinformation Paradigm. 85th Annual Meeting of the Eastern Psychological Association, Boston, MA.
- Thomas, A.K., Parsow, C., & Bulevich, J.B. (2013). Improving Memory Integration through Repeated Study and Test, Meeting of the Psychonomic Society, Toronto, CA.
- Lee, M., Chen, C., Gordon, L. T., Tenbrink, T. & Thomas, A. K. (2013). Retrieval Enhances Certainty: Using Verbal Hesitation to Understand Retrieval Enhanced Suggestibility Effects.
- Gordon, L. T., Thomas, A. K., & Bulevich, J. B. (2013). Testing Influences Attention and Processing of Misleading Information. APS 25<sup>th</sup> Annual Convention, Washington DC
- Lee, M., Thomas, A.K., Bulevich, J. B. (2013). Age differences in the Effects of Testing and Interference on Metamemory. APS 25<sup>th</sup> Annual Convention, Washington DC.
- Thomas, A. K., Lee, M., & Bulevich, J. B. (2012). The Disruptive Effects of Interference on Monitoring and Control, Meeting of the Psychonomic Society, Minneapolis, MN.
- Gordon, L. T., Thomas, A. K., & Bulevich, J. B. (2012). Testing Potentiates Learning in The Misinformation Paradigm. Meeting of the Psychonomic Society, Minneapolis, MN.
- Lee, M., Thomas, A. K., & Bulevich, J. B. (2012). Retrieval Protects Individuals' Memory and Metamemory from Interference. APS 24<sup>th</sup> Annual Convention, Chicago, IL.
- Gordon, L. T., Thomas, A. K., & Bulevich, J. B. (2012). Retrieval Enhanced Suggestibility: Testing Directs Attention During Post-Event Narrative Processing. Annual Meeting of the Eastern Psychological Society, Pittsburgh PA.
- Thomas, A. K., Bulevich J. B., & Gordon, L. (2011). Why Retrieval Enhances Suggestibility: The Role of Attention Allocation, Meeting of the Psychonomic Society, Seattle, WA.
- Lee, M., Thomas, A. K., & Bulevich, J. B. (2011). Retrieval Insulates Memorial and Metamemorial Performance from Interference, Meeting of the Psychonomic Society, Seattle WA.



- Thomas, A. K., & Bulevich, J. B. (2011). *Retrieval Difficulty Improves Metacognition and Reduces Memory Distortion*. The Society for Applied Research in Memory and Cognition, New York, NY.
- Bulevich, J.B., & Thomas, A.K. (2010). *Retrieval Difficulty Improves Metacognition and Reduces Memory Distortion*. Meeting of the Psychonomic Society, St. Louis, MO.
- Dubois, S.J. Thomas, A.K., & Bulevich, J.B. (2010). *The Dynamic Interplay between the Quality and Quantity of Contextual Information in the Feeling-of Knowing*. Meeting of the Psychonomic Society, St. Louis, MO
- Bonura, B. M., Thomas, A. K., & Taylor, H. A. (2010). *Where's the Square? Strategies and Aging in Visuospatial Working Memory*. Meeting of the Psychonomic Society, St. Louis, Missouri, USA.
- Bonura, B. M., Thomas, A. K., & Taylor, H. A. (2010). *What is That Thing and Where is it Located? Effects of Strategies and Aging on Visuospatial Working Memory*. Spatial Cognition 2010 International Conference, August 2010, Mt. Hood, Washington, USA.
- Dubois, S.J. & Thomas, A.K. (May, 2010). *When the Quality of Retrieved Contextual Information Influences the Feeling of Knowing*. 22nd Annual Meeting of the Association for Psychological Science, Boston, MA.
- Bonura, B. M., Thomas, A. K., & Taylor, H. A. (2010). *"Where" is easier than "What": Spatial Working Memory and Metacognition in Aging*. 22nd Annual Meeting of the Association for Psychological Science, Boston, MA.
- Bonura, B. M., Thomas, A. K., Taylor, H. A., & Bulevich, J. B. (2009). *Where is the Store? Age-related Changes in Spatial Information Recall*.
- Thomas, A. K., Bulevich, J. B., & Dubois, S. (2009). *When Contextual Information Matters: Consequences of Semantic Knowledge in the Feeling of Knowing*. Meeting of the Psychonomic Society, Boston, MA.
- Thomas, A. K., Bulevich, J. B., & Chan, J. C. K. (2009). *Repeated Testing in the Face of New Learning: Misleading Post-Event Information Demonstrates the Limitations of the Testing Effect*. The Society for Applied Research in Memory and Cognition, Kyoto, Japan.
- Thomas, A. K., Bulevich, J. B., Chan, J. C. K. (2008). *Confidence and the Reversed Testing Effect of Misinformation*. Meeting of the Psychonomic Society, Chicago, IL.
- Thomas, A. K., & McDaniel, M. A. (2007). *Frontal Function Affects Relational and Item-Specific Processing*. Meeting of the Psychonomic Society, Long Beach, CA.
- Dubois, S. & Thomas, A. K. (2007). *Stereotype Threat Affects Older and Younger Adult Metamemory*. The Society for Applied Research in Memory and Cognition, Lewiston, ME.
- Thomas, A. K., Glimore, A., & McDaniel, M. A. (2006). *Diminishing the Negative Cascade of Incongruent Task-Test Processing Through Repeated Testing*. Meeting of the Psychonomic Society, Houston, TX.
- Chan, C. K., Thomas, A. K., & Bulevich, J. B. (2006). *Taking and Immediate Test Increases Eyewitness Misinformation Susceptibility: The Reversed Testing Effect*. Meeting of the Psychonomic Society, Houston, TX.



- Thomas, A. K., Chan, C. K., Reisman, R., & Stauffer, M. (2006). Repeated Testing Increases Confidence but not Accuracy in the Misinformation Paradigm. Meeting of the Psychonomic Society, Houston, TX.
- Thomas, A. K., Bulevich, J. B., Dubois, S., Ragan, M., Luke, S., & Budson, A. E. (2006). What Drives Feeling of Knowing Judgments: A Comparison of Young, Old, and Alzheimer's Disease. Cognitive Aging Conference, Atlanta, GA.
- Thomas, A. K. & McDaniel, M. A. (2005). Frontal Function Restricts Ability to Rely on Individual Item Information in Attenuating False Memories. Meeting of the Psychonomic Society, Toronto.
- Thomas, A. K. and Balota, D. A. (2004). Intact Metamemory in People with Alzheimer's Disease. Meeting of the Psychonomic Society, Minneapolis, MN.
- Thomas, A. K. and Bulevich, J. B. (2004). Reducing Imagination Inflation in Older Adults by Increasing Access to Veridical Memories. Meeting of the Psychonomic Society, Minneapolis, MN.
- Thomas, A. K. and Balota, D. A. (2004). Illusions of Competence in Younger and Older Adults as Assessed Through Judgments of Learning. Cognitive Aging Conference, Atlanta, GA.
- Thomas, A. K. and Sommers, M. S. (2003). Semantic Convergence Drives Age Differences in False Memories. Meeting of the Psychonomic Society, Vancouver, CA.
- Thomas, A. K. (2002). Familiarity and Source Misattribution as Contributors to Imagination Inflation in Older Adults. Meeting of the Psychonomic Society, Kansas City, MO.
- Thomas, A. K. and Sommers, M. S. (2002). Phonological Neighbors Not Only Lead to False Recognition but Also to Priming for Non-Presented Associates. Meeting of the Psychonomic Society, Kansas City, MO.
- Thomas, A. K., Bulevich, J. B., and Loftus, E. F., (2000). False Memory Vividness as a Function of Imagination. American Psychological Society, Miami, FL.
- Bulevich, J. B., Thomas, A. K., and Loftus, E. F., (2000). The Effect of Enhanced Imagination on Usual and Unusual Actions. Northwest Conference on Cognition and Memory, Bellingham, WA.
- Berliner, L., Hyman, I., Fitzgerald, M., and Thomas, A. K., (1999). Children's Memories for Traumatic and Positive Experiences. The Society of Applied Research in Memory and Cognition, Boulder CO.
- Thomas, A. K., and Loftus, E. F., (1999). Imagination Affects Memory for Familiar and Bizarre Actions. American Psychological Society, Denver CO.
- Hannula, D. E., Thomas, A. K., and Loftus, E. F., (1999). Does Imagination Influence Our Behaviors or Only Our Perception of Behaviors? American Psychological Society, Denver CO.
- Thomas, A. K., and Loftus, E. F. (1998). The Creation of False Memories: Effects of Imagination on Source Memory for Familiar and Bizarre Actions. Western Psychological Association, Albuquerque, NM.



## **SERVICE TO THE FIELD**

### **ASSOCIATE EDITOR**

Memory & Cognition

### **EDITORIAL BOARDS**

Journal of Experimental Psychology: Learning, Memory, & Cognition  
Archives of Scientific Psychology

### **AD HOC GRANT REVIEWER ACTIVITIES**

National Science Foundation  
National Institutes of Health  
DFG German Research Foundation

### **AD HOC REVIEWER**

Acta Psychologica  
Aging, Neuropsychology, & Cognition  
Applied Cognitive Psychology  
American Journal of Psychology  
Brain and Cognition, Consciousness & Cognition  
Cognitive Science  
Journal of Experimental Psychology: Applied  
Journal of Experimental Psychology: Learning, Memory & Cognition  
Journal of Experimental Social Psychology  
Journal of Gerontology: Series B  
Journal of the International Neuropsychological Society  
Emotion  
European Journal of Cognitive Psychology  
European Journal of Educational Psychology  
Memory  
Memory & Cognition  
Neuropsychological Rehabilitation  
PLOS ONE  
Psychonomic Bulletin & Review  
Psychological Science  
Psychology and Aging

## **UNIVERSITY AND DEPARTMENTAL SERVICE**

- Graduate Director, Psychology Dept., Tufts University, 2016 -
- Deputy Graduate Director, Psychology Dept., Tufts University, 2015-2016.
- Faculty Mentor, Tufts University, 2015-2016.
- Co-Chair, Cognitive Applied Cognitive Psychology Search Committee, Psychology Dept., Tufts University, 2015-2016.
- Primary Organizer, Cognitive Brain Science Information and Alumni Session, Psychology Dept., Tufts University, 2015



- Steering Committee, Healthy and Active Aging, Tufts University 2014 – present.
- Chair, Human Subjects Committee, Psychology Dept., Tufts University 2014 - present.
- Graduate Student Education Committee, 2013 – present.
- Specific Learning Disabilities Committee, 2010 – 2014.
- Colloquium Series Administrator, Psychology Dept., Tufts University, 2008 – 2015.
- Participant in Stewardship Video F15, Tufts University.
- Chair, Cognitive Neuroscience Search Committee, Psychology Dept., Tufts University, 2014-2015.
- Cognitive Developmental Search Committee, Psychology Dept., Tufts University, 2012 – 2014.
- Prospective Weekend in the Psychology Dept., 2011 – 2014.
- Thematic Area Working Group for Healthy Aging, Tufts University, 2012-2013.
- General Education Assessment Project, 2011 – 2014.
- LA & J Curriculum Committee, Tufts University, 2012 – 2013.
- Summer Scholars Program, Tufts University, 2010, 2012, 2013.
- Undergraduate Orientation Panel: What University Professors Do? 2012, 2013.
- August Preview, Dinner for First Generation Students, Tufts University, 2012, 2013.
- Graduate Student Research Award Committee (GSRAC), Tufts University, 2012, 2013.
- Graduate Committee, Psychology Dept., 2011 – present.
- Cognitive and Cognitive Science Search Committee, Psychology Dept., Tufts University, 2011.
- Committee on Specific Learning Disabilities, 2010 – present.
- Talloires Committee, Tufts University, 2008-2009.
- Visibility Web and Communications Committee, Psychology Dept., Tufts University, 2007-2009.
- Library Committee, Colby College, 2006 – 2007.
- Faculty Advisor, Psychology Club, Colby College, 2005 – 2007.
- Subject Pool Administrator, Psychology Dept., Colby College, 2005 – 2007.
- Colloquium Series Administrator, Psychology Dept., Colby College, 2005 – 2006.
- Graduate Student Representative, Minority Concerns Committee Psychology Dept., University of Washington, 1999 – 2001.
- Graduate Student Representative, Human Subject's Committee Psychology Dept., University of Washington, 1998 – 1999.

## TEACHING EXPERIENCE AND INTERESTS



### **UNDERGRADUATE**

Introduction to Psychology  
Cognitive Psychology  
Human Memory  
Applying Cognition to Education  
Eyewitness Testimony

### **GRADUATE**

Human Learning and Memory  
Cognitive Psychology Core  
Cognitive Aging  
Metacognition

### **MASTERS AND DISSERTATION SUPERVISION**

- Ruizhi Dai (2015) Masters Thesis Title: The "What" and the "Where": Aging and Visuo-Spatial Working Memory.
- Amy Smith (2015) Masters Thesis Title: "Education and Retirement Status Moderate Older Adults' False Memory Susceptibility Under Stereotype Threat"
- Clinton Perry (2015) Masters Thesis Title: The impact of caffeine use across the lifespan on cognitive performance in the elderly
- Leamarie Gordon (2015) Dissertation Title: Test-Mediated Learning: The Role of Attention on Subsequent Information Processing in the Misinformation Paradigm
- Meeyeon Lee (2015) Dissertation Title: Strategic Regulation in Older Adults.
- Stacey Dubois (2010) Masters Thesis Title: Meaning Matters: When the Quality of Retrieved Contextual Information Influences the Feeling of Knowing.
- Bailey Bonura (2010) Masters Thesis Title: Age Differences in Remembering "What" and "Where": A Comparison of Spatial Working Memory and Metacognition in Older and Younger Adults.

### **GRADUATE STUDENT COMMITTEE SERVICE**

- Daniel Barch, (2015) Dissertation Title: Assessing Models of Subjective Probability Judgment. Committee Chair: Richard Chechile, Tufts University.
- Jennifer Schultz, (2013) Fourth Year Paper Evaluation: A Model of Race-related Exchanges: Interaction Expectations, Cognitive and Affective Consequences, and Outcomes, Advisor: Keith Maddox, Tufts University.
- Philipp Opitz, (2013) Dissertation Title: Evidence for the Role of Working Memory Capacity in the Success and Selection of Emotion Regulation Strategies. Committee Chair: Heather Urry, Tufts University.
- Margueaux Auslander, (2013). Effects of Control Beliefs on Veridical and False Memory in Reality Monitoring, Schema Use, and the Misinformation Effect. Committee Chair: Angela Gutchess, Brandeis University.
- Simon Howard (2013) Masters Thesis Title: Examining the Cross-Race Effect and Processing Style, Committee Chair: Sam Sommers, Tufts University.
- Qi Wang (2013) Dissertation Title: Perceptuo-Motor Associations in Spatial Knowledge: Encoding or Retrieval Effect? Committee Chair: Holly Taylor, Tufts University.
- Jeff Birk (2012) Fourth Year Paper Title: Building a Causal Model of Attentional Contributions to Anxiety. Advisor: Heather Urry, Tufts University.



- Lara Sloboda (2012) Dissertation Title: The Quantitative Measurement of Explicit and Implicit Memory and its Applications to an Aging Population. Committee Chair: Richard Chechile, Tufts University.
- Daniel Barch (2011), Masters Thesis Title: Memory and Probability, Committee Chair: Richard Chechile, Tufts University.
- Qi Wang (2011) Fourth Year Project Title: Distinct Sources of Action Compatibility in Development of Spatial Knowledge. Advisor: Holly Taylor, Tufts University.
- Lisa Lucia (2011) Fourth Year Project Title: Video Games Improve Visuo-Spatial Abilities, Advisor: Haline Schendan and Holly Taylor, Tufts University.
- Philipp Optiz (2010). Masters Thesis: Physiological Correlates of Gaze-Directed Reappraisal in Younger and Older Adults. Advisor: Heather Urry, Tufts University.

#### HONORS STUDENTS/SENIOR PROJECT SUPERVISION AND COMMITTEE SERVICE

- Alex Siegel (2015) Honors Thesis Title: How Emotion Facilitates Visuo-Spatial Binding, Committee Chair: Ayanna Thomas
- Christina Harvey (2015) Honors Thesis Title: The Influence of Racial Biases on Social Contagion, Committee Chair: Ayanna Thomas
- Shoshana Oppenheim (2015) Honors Thesis Title: Semantic and Spatial Biasing in Map Processing
- Leah Petrucelli (2015) Senior Independent Project Title: How Athletic Wearables Affect Workout Motivation
- Danielle Westerman (2015) Senior Independent Project Title: Stereotype Threat Affects Older Adult Misinformation Susceptibility
- Andrew Rodgers (2014) Honors Thesis Title: The Effects of Cognitive Control Manipulations on Anxiety, Committee Chair: Heather Urry
- Mitchell Mosk (2014) Honors Thesis Title: An Analysis of Music Listening Behavior as it Relates to Addiction, Committee Chair: Aniruddh Patel
- Nisha Mehta (2014) Honors Thesis Title: The Effect of State Anxiety on Emotional Associative Binding, Committee Chairs: Heather Urry and Ayanna Thomas
- Michael Roubey (2014) Honors Thesis Title: With the First Pick in the NFL Draft, Tversky and Kahneman Select..., Committee Chairs: David Garman and Ayanna Thomas
- Paul Cernasov (2014) Senior Independent Project Title: Endogenous and Exogenous Attention Direction in a Repeated Testing Misinformation Paradigm
- Michael Richard (2013) Honors Thesis Title: Video Games Modulate Visuo-Spatial Problem Solving Ability. Committee Chair: Ayanna Thomas.
- William Carroll (2013) Honors Thesis Title: The Effects of Associative Priming on Retroactive Interference. Committee Chair: Ayanna Thomas.
- Charles Parsow (2013) Senior Independent Project Title: Improvement Memory Integration Through Repeated Study and Test.



- Caroline Chen (2013) Senior Independent Project Title: Choose Your Words Wisely: What Verbal Hesitation Indicates About Eyewitness Accuracy
- Steven Goeman (2013) Senior Independent Project Title: Primed Processing States Do Not Aid Cross-Racial Identifications
- Peter Millar (2010) Honors Thesis Title: Eliminating Risk Biases in Elderly Decision Making, Committee Chair: Ayanna Thomas.

#### OTHER UNDERGRADUATE INDEPENDENT PROJECTS

- Kanika Kamal (2015). Project Title: Paving the road to exam success: the benefits of repeated testing on exam performance, Presented at the Undergraduate Research Symposium, Tufts University, MA.
- Reid, A. G., Rakhilin, M., Patel, A. D., Urry, H. L., Thomas, A. K. (2015). Singing training as an intervention for age-related cognitive decline: Preliminary results. Poster session presented at the Undergraduate Research & Scholarship Symposium, Tufts University, MA.
- Reid, A. G., Rakhilin, M., Patel, A. D., Urry, H. L., Thomas, A. K. (2015). Singing training as an intervention for age-related cognitive decline: Preliminary results. Poster session presented at the Psychology Undergraduate Research Conference, UCLA, CA.

#### EXPERT TESTIMONY AND CONSULTATION

*Commonwealth of Massachusetts v. Samla* (October 2014).

Testified about memory reconstructive processes, distortions that result from encoding and retrieval factors, lineup procedures, and estimator factors that influence eyewitness identification, Worcester Superior Court, Worcester MA

*Commonwealth of Massachusetts v. Watkins* (January 2015).

Testified about memory reconstructive processes, distortions that result from encoding and retrieval factors, CCTV identification, system variables that affect lineup identification, Suffolk Superior Court, Boston MA

*Commonwealth of Massachusetts v. Anderson* (February 2015).

Testified about memory reconstructive processes, factors that influence eyewitness identification, specifically cross-race identification, limited time and time distortion, police as witness, Boston Municipal Court, Boston MA

*Commonwealth of Massachusetts v. Phuon* (February 2015).

Testified about memory reconstructive processes, factors that influence eyewitness identification, specifically stress, disguises, Middlesex Superior Court-Lowell, Lowell MA

*Commonwealth of Massachusetts v. Saborin* (March 2015).

Testified about memory reconstructive processes, top-down processes, CCTV identification, body-gait and movement, Westfield District Court, Westfield MA

*Commonwealth of Massachusetts v. King* (March 2015).



Testified about memory reconstructive processes, factors that influence eyewitness identification, such as stress, Brockton Superior Court, Brockton MA

*Connecticut v. Ellis* (May 2015).

Testified about memory reconstructive processes, police as witnesses, cross-racial identification, New Haven Superior Court, New Haven CT

*Commonwealth of Massachusetts v. Redondo* (June 2015).

Testified in Motion to Suppress Hearing about memory reconstructive processes, factors that influence eyewitness identification, such as weapon focus, stress, disguises, lineup construction, Essex Superior Court, Lawrence MA.

*Commonwealth of Massachusetts v. Ramos* (July 2015).

Testified about memory reconstructive processes, the effect of head trauma on memory, weapon focus, exposure duration, lineup construction, and lineup instructions, Bristol County Superior Court, Fall River MA.

*Commonwealth of Massachusetts v. Shbeer* (July 2015).

Testified about memory reconstructive processes, reality monitoring, memory distortion, alcohol and memory consolidation, Norfolk Superior Court, Dedham MA.

*Commonwealth of Massachusetts v. Rosa* (August 2015).

Testified about memory reconstructive processes, cross-racial identification, weapon focus, show-up procedures, lineup construction, and lineup instructions, Middlesex Superior Court, Woburn MA.

*Commonwealth of Massachusetts v. Campbell* (August 2015).

Testified about memory reconstructive processes, cross-racial identification, weapon focus, show-up procedures, lineup construction, and lineup instructions, Middlesex Superior Court, Woburn MA.

*Commonwealth of Massachusetts v. Seigny* (September 2015).

Testified about memory reconstructive processes, false memory creation, child witnesses, Hampden County Superior Court, Springfield MA.

*Commonwealth of Massachusetts v. Pierre* (November 2015).

Testified about memory reconstructive processes, cross-racial identification, PTSD and memory, (Voir Dire only) Middlesex Superior Court, Woburn MA.

*Commonwealth of Massachusetts v. Brown* (January 2016).

Testified about memory reconstructive processes, police as witness, weapon focus, cross racial identification. Boston Municipal Court, Boston MA.

*Commonwealth of Massachusetts v. Pastoreck* (March 2016).



Testified about memory reconstructive processes, stress and memory, estimator variables such a lighting, distance, and disguises. Show up identification procedures. Hampden County Superior Court, Springfield MA.

*Commonwealth of Massachusetts v. Galvin* (March 2016).

Testified about memory reconstructive processes, stress and memory, estimator variables such a lighting, distance, and disguises. Unconscious transference. Show up identification procedures. Suffolk Superior Court, Boston MA.

*Commonwealth of Massachusetts v. Brown* (May 2016).

Testified about memory reconstructive processes, stress and memory, estimator variables such a lighting, distance, and time to view. Cross-racial identification. Police as witness. Unconscious transference. Middlesex Superior Court, Lowell MA.

*Connecticut v. Pugh* (May 2016).

Testified about memory reconstructive processes, perceiving a face while in motion, New Haven Superior Court, New Haven CT

*Commonwealth of Massachusetts v. Fisher* (August 2016).

Testified about memory reconstructive processes, stress and memory, estimator variables such a lighting, distance, and time to view. Unconscious transference. Norfolk Superior Court, Dedham MA.

From 2013 to the present I have consulted with attorneys on various cases that ultimately did not research trial. My general expertise covers reconstructive memory processes, eyewitness memory, and factors that influence memory errors, distortions, and false memories. I have worked with attorneys in Massachusetts, Connecticut, and Maine.